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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,815	07/21/2003	Marco Troost	P2001,0034	5766
24131	7590	06/15/2005	EXAMINER	
LERNER AND GREENBERG, PA P O BOX 2480 HOLLYWOOD, FL 33022-2480			NADAV, ORI	
			ART UNIT	PAPER NUMBER
			2811	

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/623,815	TROOST, MARCO	
	<b>Examiner</b>	<b>Art Unit</b>	
	ori nadav	2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2005.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 and 5-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiga (5,416,660) in view of Chrysostomides et al. (5,646,434) and Takamoto et al. (5,079,612).

Shiga teach in figure 2a and related text a semiconductor component comprising: a semiconductor chip 7 including an electronic circuit configured therein, said electronic circuit having a terminal for a signal to be processed, said electronic circuit having a stage connected to said terminal for the signal, said electronic circuit having a terminal for obtaining a supply potential 6, said terminal for obtaining the supply potential being connected to said stage, said stage selected from a group consisting of an input stage and an output stage;

a first conductor track running outside said semiconductor chip, said first conductor track being connected to said terminal for the signal;

a second conductor track running outside said semiconductor chip, said second conductor track being connected to said terminal for obtaining the supply potential;

a further conductor track 6 running outside said semiconductor chip, said further conductor track being connected to said second conductor track;

an ESD protection element 2 for carrying an electrostatic discharge away from said terminal for the signal and to the supply potential, said ESD protection element for carrying the electrostatic discharge disposed outside of said semiconductor chip; and

said ESD protection element for carrying the electrostatic discharge connected (at least electrically connected) outside of said semiconductor chip to said further conductor track (power supply) and to said first conductor track.

Shiga does not teach a stage selected from a group consisting of an input stage and an output stage, and a further conductor track surrounds said semiconductor chip.

Chrysostomides et al. teach in figures 1 and 5 and related text a stage selected from a group consisting of an input stage and an output stage, and a further conductor track 23 surrounds said semiconductor chip, wherein bonding wires 9 and 6 of first conductor track and second conductor track cross said further conductor track, thus defining a crossing location wherein said ESD protection element being disposed close to said crossing location.

Takamoto et al. teach in figure 1 and related text a further conductor track 21, 22 surrounds a semiconductor chip, wherein bonding wires of first conductor track and second conductor track cross said further conductor track, thus defining a crossing location wherein said ESD protection element being disposed close to said crossing location.

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It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a stage selected from a group consisting of an input stage and an output stage and a further conductor track surrounds Shiga's semiconductor chip, in order to use the device in an application which requires an ESD protection to an input and an output stage of the chip, and in order to improve the noise characteristics of the device and to simplify the external connections to the device by providing a further conductor track surrounding the semiconductor chip, respectively.

Regarding the claimed limitations of a further conductor track crossing said first conductor track, thus defining a crossing location and said further conductor track crossing said second conductor track, wherein said ESD protection element being disposed close to said crossing location, these features are inherent in prior art's device because since the further conductor track surrounds the semiconductor chip, it must cross said first conductor track, thus defining a crossing location and it must cross said second conductor track. The ESD protection element is inherently disposed close to said crossing location.

Regarding claim 2, Shiga teaches in figure 2a and related text a package surrounding said semiconductor body and said further conductor track; said package partially surrounding said first conductor track such that a portion of said first conductor track facing toward said semiconductor chip runs inside said package and a portion of said first conductor track facing away from said semiconductor chip runs outside said package; and

said package partially surrounding said second conductor track such that a portion of said second conductor track facing toward said semiconductor chip runs inside said package and a portion of said second conductor track facing away from said semiconductor chip runs outside said package.

Regarding claim 3, Shiga teaches in figure 2a and related text said ESD protection element is a diode; said diode has an anode connected to said further conductor track; and said diode has a cathode connected to said first conductor track.

Regarding claim 5, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use an insulation material configured where said further conductor track crosses said first conductor track in Shiga's device, in order to avoid short circuit the device.

Regarding claim 6, Chrysostomides et al. teach in figure 5 a third conductor track Vcc2; a terminal for a signal and assigned to said third conductor track; and a further element 13, 15 for carrying an electrostatic discharge; said further conductor track running in a main direction and having a conductor track portion branching away from said main direction; said third conductor track crossing said further conductor track near said conductor track portion of said further conductor track (via wiring 8); and said conductor track portion of said further conductor track is connected to said further element for carrying the electrostatic discharge.

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Regarding claims 7-8, Chrysostomides et al. teach in figure 5 a bonding wire connecting said first conductor track to said terminal for the signal; and a bonding wire connecting said second conductor track to said terminal for obtaining the supply potential, wherein said terminal for the signal and said terminal for obtaining the supply potential are metallized areas configured in said semiconductor body.

Regarding claim 9, Chrysostomides et al. teach in figure 5 an input stage has at least one transistor with a gate connected to said terminal for the signal; said transistor has a drain terminal and a source terminal; said drain terminal or said source terminal of said transistor connected to said terminal for the supply potential.

Regarding claim 10, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use an inverter as the input stage in Shiga's device in order to use the device in an application which requires an inverter.

Regarding claim 11, Shiga teaches in figure 2a and related text claim 1 a package wall disposed outside said semiconductor chip and including said first conductor track, said first conductor track having a contact area connected to a terminal of said electrostatic discharge protection element. Shiga does not teach a package wall comprising a lead frame. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a lead frame in Shiga's device in order to use simplify the processing steps of making the device by using conventional packaging material.

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Regarding claim 12, Shiga teaches in figure 2a and related text said first conductor track is connected to said terminal for the signal through a bonding wire.

### ***Response to Arguments***

Applicant argues that in Chrysostomides et al., the ESD protection element 16 is not connected to the bonding wires 6, and, in particular, is not disposed where the bonding wires 6, 9 cross the track 23. Applicant further argues that the conductor track 23 of Chrysostomides et al. is an integrated conductor track and runs within the integrated circuit.

Chrysostomides et al. is cited to teach an artisan that a further conductor track surrounds said semiconductor chip. Chrysostomides et al. teach in figure 5 a further conductor track 23 surrounds a semiconductor chip. Furthermore, the broad recitation of the claim does not exclude the further conductor track 23 from being an integrated conductor track and running within an integrated circuit.

Applicant argues that none of the references shows "said electrostatic discharge protection element being disposed close to said crossing location".

The claimed limitation of an electrostatic discharge protection element being disposed close to said crossing location comprises a relative term ["close"]. All the references teach an electrostatic discharge protection element being disposed relatively close to said crossing location.

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**Papers related to this application may be submitted to Technology center (TC) 2800 by facsimile transmission. Papers should be faxed to TC 2800 via the TC 2800 Fax center located in Crystal Plaza 4, room 4-C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Group 2811 Fax Center number is (703) 308-7722 and 308-7724. The Group 2811 Fax Center is to be used only for papers related to Group 2811 applications.**

Any inquiry concerning this communication or any earlier communication from the Examiner should be directed to *Examiner Nadav* whose telephone number is **(571) 272-1660**. The Examiner is in the Office generally between the hours of 7 AM to 4 PM (Eastern Standard Time) Monday through Friday.

Any inquiry of a general nature or relating to the status of this application should be directed to the **Technology Center Receptionists** whose telephone number is **308-0956**

A handwritten signature in black ink, appearing to read 'O. Nadav', with a stylized flourish at the end.

O.N.  
6/13/05

ORI NADAV  
PRIMARY EXAMINER  
TECHNOLOGY CENTER 2800